

**ABSTRACT**

The present invention pertains to a method of, and a device created by, depositing an inorganic permeation layer on a micro-electronic device for molecular biological reactions. The permeation layer is preferably sol-gel. The sol-gel permeation layer can be created with pre-defined porosity, pore size distribution, pore morphology, and surface area. The sol-gel permeation layer may also function as the attachment layer of the micro-electric device.

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